

the
Maryland
natural resource

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Martin O'Malley
Governor

**Maryland Department of
Natural Resources**

John R. Griffin
Secretary

The Maryland Natural Resource

...Your guide to recreation &
conservation in Maryland

Darlene Pisani
Director
Office of Communications

Josh Davidsburg
Senior Communications
Manager

Jill Zarend-Kubatko
Editorial Manager

Peter Lampell
Art Director/Layout & Design

LaVon Boston
Circulation Manager

Editorial Support
Darlene Walker • Ann Watts

Contributors

Paula Becker • Tim Culbreth
Bob Gaudette • Jamie Haydel
Karis King • Donna Morrow
Kim Nutter • D. Matthew Ritter
Scott Smith • Dr. Anne Hairston-Strang
Molly Winans

The Maryland Natural Resource
580 Taylor Avenue, D-4
Annapolis, Maryland 21401
Toll free in Maryland:
1-877-620-8DNR ext. 8007
Out of state call: 410-260-8007
Website: www.dnr.maryland.gov
E-mail address:
Jkubatko@dnr.state.md.us
ISSN 1521-9984

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Thanks!
Steve Aprile



the

Maryland natural resource

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Becka Ziegler

**SERVATION
RESERVE
PROGRAM**

**not being mov
valuable wildl
to reduce run
Chesapeake Bay**

USDA



of the Chesapeake Bay Foundation

Summer 2011

THE COMMON GOOD



Jay Baker

Our natural treasures — western mountains, rivers and streams, rural farms and forests, our beloved Chesapeake Bay and our Atlantic beaches — have earned us the title America in Miniature.

When it comes to great, safe places to enjoy these natural treasures, nothing beats Maryland State Parks.

Our network of 66 State Parks is a tremendous asset to our State, presenting

exciting outdoor recreation opportunities to both residents and visitors, while helping invigorate local economies. From traditional experiences like hiking and camping, to techno-activities such as geocaching, to unique adventures like rock climbing and searching for fossils, our State Parks abound with diverse opportunities for every age and skill level.

The results of a recent survey of visitors confirmed what many of us have known all along — that Maryland State Parks and their professional staff are doing an exceptional job of meeting and even surpassing expectations.

The vast majority of park visitors rank their experience as extremely positive. In fact, more than 90 percent of those surveyed had their expectations met or exceeded, and agreed or strongly agreed that Maryland State Parks offer a safe and affordable way to escape from stress, connect with nature and present positive experiences for children.

The study also showed that our Parks are having a significant economic impact, providing more than \$650 million annually to local economies and the State.

Park visitors directly spend more than \$567 million during their trips, supporting more than 10,000 full-time jobs and generating more than \$39 million in State and local retail, hotel, gas and income taxes. Visitor spending in our communities proves that our investments are working and are providing valuable returns — including job creation — that help keep Maryland smart, green and growing; for every dollar the State invests, visitors spend \$25.56 locally during their State Park visits.

This study tells us that our parks are not only bringing important dollars into local communities and State coffers, they are also helping us connect — with nature and with each other — in a way that is meaningful and vital to our well-being as humans.

The report clearly demonstrates that the commitment and professionalism of our park staff and volunteers are an important part of what makes Maryland State Parks special.

In the words of our Maryland State Parks Superintendent, Nita Settina, “It is especially heartening to see the pride and commitment of our staff and volunteers validated as they work to host visitors in safe, welcoming places that nourish mind, body and spirit.” As Marylanders, we take pride in our State and our natural world.



Tom Darden

Greenbrier State Park, Boonsboro

We understand the value of stewardship and the importance of a sustainable future, and are committed to working together to create a smarter, greener State.

A handwritten signature of Martin O'Malley in black ink.

Martin O'Malley
Governor

Both day and overnight visitors to State Parks were surveyed between May and October 2010 for the study, which was conducted in partnership with the Maryland Office of Tourism Development, the Maryland Department of Natural Resources and the Maryland Association of Destination Marketing Organizations.

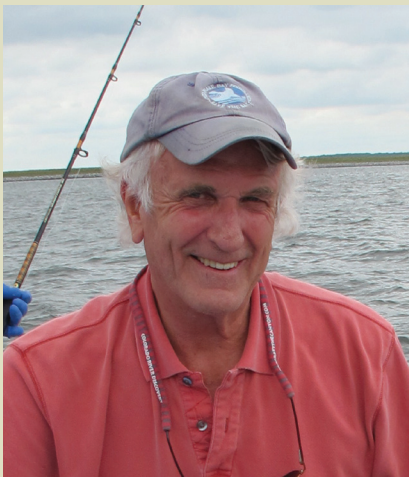
CONSIDER THE ELEMENTS

"The best remedy for those who are afraid, lonely or unhappy is to go outside, somewhere where they can be quiet, alone with the heavens, nature and God...nature brings solace in all troubles."

Anne Frank (1929-1945)

Across time and tide, war and peace, young and old, Anne Frank's thoughts on the comforts of nature, speak to the very heart of humankind.

From the wildflowers of spring to the brilliant foliage of autumn, every season in nature brings its own unique gifts to those open to receiving them. But for most of us, our earliest remembrances of the great outdoors are of summer



Jay Baker

— lush green grass, sea and sand, the first lightning bugs of the evening, and uncommon freedom to explore and discover. For all of our lives, the magic of summer holds a special place for the child within.

The same rings true for our own children, who will rarely recall days spent playing video games or watching television. What they will cherish are memories of a kayak trip down the Susquehanna River, counting shooting stars in a night sky, hiking to Cunningham Falls, catching their first fish or chasing waves at the ocean.

For young people, outdoor activities at every level enrich the spirit, stimulate the intellect and promote

good health. For this reason, in 2009, Governor Martin O'Malley proclaimed that every Maryland child shall have the opportunity to:

Discover & connect with their natural world.

Play & learn outdoors.

Splash & swim in the water.

Camp under the stars.

Follow a trail.

Catch a fish.

Watch wildlife.

Explore wild places close to home.

Celebrate their culture & heritage.

Share nature with a great mentor or teacher.

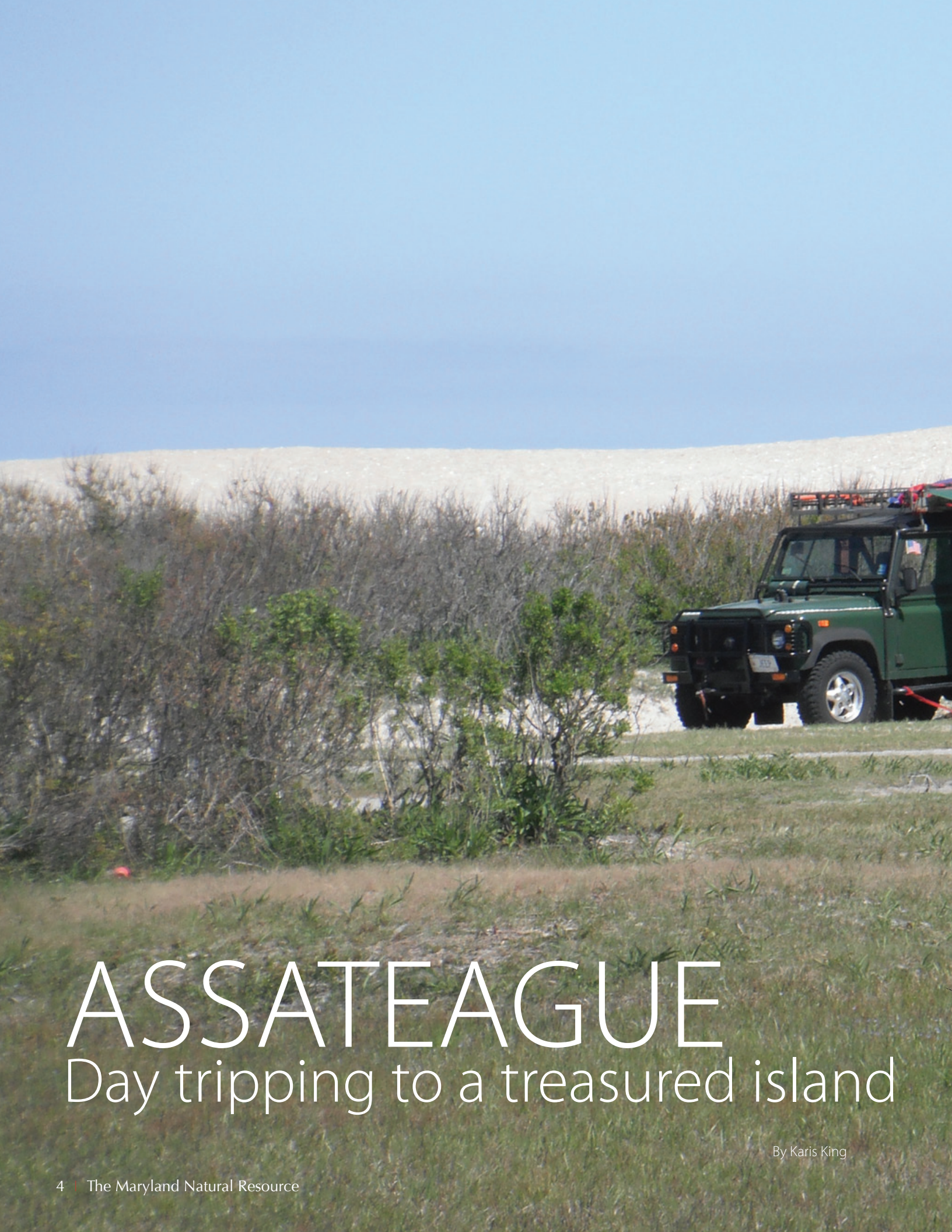
This summer I encourage my fellow grown-ups to take advantage of the fact that we, too, still have these rights – albeit our great mentors or teachers will likely be young people, given the fresh perspectives they bring to every adventure.

Experiencing the wonders of the great outdoors can help us more fully appreciate where we came from; sharing that appreciation with our children, we are promoting a new generation's understanding of the power of our natural world.

Time spent reconnecting with our inner child — and our actual children — and finding the beauty in nature is the greatest gift we can give to ourselves and to them. May you take every opportunity this summer to spend time in our natural world, and may your connection to nature bring new meaning to your life and bring you closer to the ones you love.

John R. Griffin
Secretary

To ensure all Maryland young people have the opportunity to connect with their natural world and grow to become informed and responsible stewards, Governor Martin O'Malley established the Maryland Partnership for Children in Nature in 2008, which is now being used as a national model. Central to the Partnership's mission is supporting school systems as they develop environmental literacy programs, and guiding effective and accessible outdoor learning and recreation for all. On June 21, 2011, the State Board of Education approved an Environmental Literacy Graduation Requirement, making Maryland the first state in the country to ensure every student will receive a comprehensive, diverse environmental education that meets the approval of the State Superintendent of Schools.



ASSATEAGUE

Day tripping to a treasured island

By Karis King

Like clockwork, after every Maryland frigid winter and mucky spring, a summer getaway seems imperative. For those in search of a trip that is nearby, relaxing and most of all affordable, Assateague Island is the perfect destination.

With its tall, dancing sea grasses, salty ocean air, never-ending shoreline and trails that reinvent themselves with every turn, one can't help but be invigorated by Assateague Island's splendor. Simply put, if Maryland is "America in Miniature," then Assateague Island is the equivalent of the Carolina Coast.

The Island is made up of Assateague State Park and neighboring Assateague Island National Seashore Park. It is a 37-mile-long barrier island that lies off the coast of Maryland and Virginia. The beaches look virtually untouched, the parks are immaculate and the island's charm is immediately multiplied by the wild ponies roaming freely. Not only is Assateague Island beautiful, but there is also plenty to do.

Assateague State Park is Maryland's only oceanfront park. It boasts two miles of Atlantic Ocean beaches on one side and Sinepuxent Bay on the other. The region serves as the perfect summer retreat. The ocean side of the park offers swimming, beachcombing, sunbathing, surfing and fishing, while the bay side provides visitors the opportunity to explore secluded coves by canoe or kayak. The marsh areas offer the chance to see a variety of wildlife, including deer, waterfowl and of course, wild ponies.

Island getaway

The beginning of your journey onto the island is marked by a bridge that seemingly ascends into the limitless skyline, where the sparkling ocean is all that can be seen for miles. This serves as an enticing gateway, evoking excitement for what lies ahead.

Once on the island, the options are plentiful. You can bee-line to the beach, head to the restaurant for a snack or begin exploring. Whether you want to relax with a book on the bay or hit the trails, Assateague has something to fit your family's desires and interests. The park offers a variety of activities that can be made into a day, a weekend or even a week-long getaway.

Coasting along

Most likely, the toughest decision you'll have to make is whether you want to head straight for the beach, or explore plants and creatures hidden within the maritime forests, salt marshes and coastal bay. The serene bay serves as the perfect setting for a rest during a hike or bike ride.

Assateague State Park has the only beach camping area in Maryland. There are 350 camp sites where you can get settled and experience Assateague under the night sky with the ocean's waves as a soundtrack. Backcountry camping is also available if you wish to backpack or paddle around the island. The campsites are clean with each offering a fire ring, picnic table and hot water bathhouse facilities.



Grazing wild pony



At play on the beach

I'd rather be fishing

When it comes to sport fishing, Assateague is known for some of the best inshore and surf fishing opportunities along the Atlantic Coast. You can fish for flounder along the inlets and back bay or surf fish for striped bass, red drum and other species from the beach.

Surf fishing on the beach is permitted at the State Park outside of the lifeguarded areas. Bay fishing is allowed at the marina piers and from boats in designated areas of the bay. Clamming is allowed at the State Park and at the National Park on different parts of the bay side.

What else to do

Fun events for kids and adults are held throughout the summer at the State Park. Take your family to participate in a fishing derby, attend an arts and crafts workshop or see a movie under the stars. The most exciting encounter will probably be with one of the island's wild ponies (or a herd!).

"You may need to hike around the island to include the National Park which adjoins the State Park, but the ponies can be seen all the time," says Assateague State Park Manager Mike Riley. "However use caution and remember they're wild animals and you must respect that."

Assateague State Park also offers a wide variety of interpretive programs for visitors of all ages. Be sure to visit the Nature Center and explore this year's displays and exhibits. If you want an up-close look at the island's aquaculture, the aquarium features critters such as horseshoe crabs, whelks and seahorses. You can also peek in on the corn snake and screech owl. There is something for everyone at the Nature Center.

Trip tips

To ensure you and your family have a worry free trip, remember that "Assateague



Karis King (3)

LEFT: Boardwalk along Sinepuxent Bay
BOTTOM LEFT: Campers enjoy Maryland's only beachfront campground at Assateague State Park.



In late May, Assateague Island State Park was featured on *Good Morning America* as a budget friendly vacation destination. *CBS Sunday Morning* also highlighted Assateague as its "Moment of Nature" feature at the end of the broadcast.

Assateague Island National Seashore Park.

Expand your adventure

While there, take advantage of the other local attractions nearby. Ocean City, with its delicious Maryland seafood and exciting nightlife, is approximately nine miles north of Assateague State Park. There are also plenty of great shopping areas including an outlet mall and the popular three-mile boardwalk along the beach. Less than eight miles away is the historic town of Berlin, which boasts quaint shops, art galleries, a historic hotel and locally owned restaurants. ■

For more information call Assateague State Park headquarters at 410-641-2918 or visit dnr.maryland.gov/publiclands/eastern/assateague.asp.



State Park is on a barrier island with little natural cover to provide shade from the sun so remember to bring sunscreen," says Riley. "The Island is also home to many bugs so bring repellent for a much more enjoyable visit."

In addition, be aware of the day's forecast and have a plan of action in case it changes. "Keep in mind the ever-changing weather patterns in and near

the ocean and bay, and be prepared to seek cover if you see or are advised of an approaching storm," says Riley.

Be sure to bring some cash for parking and snacks. If you want to fish the surf in the Day-Use/Beach area, the standard parking charges apply: in-season, \$3 per person for Maryland residents, \$4 per person for non-residents. There are also fees associated with neighboring

Karis King is Communications Assistant with DNR's Office of Communications.

'I'm Bored'

Keeping kids busy while camping

By D. Matthew Ritter

Recall a simpler time from childhood... camping with family and friends... the excitement, memories and traditions. Remember cooking over a campfire, catching lightning bugs, building forts in the woods and playing flashlight tag?

Fast forward to 2011 and the two simple words that can strike fear into the heart of parents everywhere: "I'm bored." Return to the basics and leave the technology at home. Don't worry Maryland Park Service is here to help. Check out these entertaining activities for your upcoming camping trip... and don't forget to reconnect to your childhood and to nature. Your own enthusiasm will magnify a child's excitement!

you are visiting and what programs are offered during your stay. If you still don't know what to do with your time, consider a few of these suggestions: create a scavenger hunt, visit the nature center/museum; create a boat out of natural elements and have a race; discover geocaching, letterboxing or orienteering. Play disc golf, borrow a Discovery Pack from the park office, ask about available Park Quests, do some bug catching and observing, stargaze, bike, hike, fish, boat, volunteer, jump in puddles or go swimming.

Field and campsite games

Need something to fill the down time in between activities? Try a few of these ideas:

travel games, playing cards, I-spy, kite flying, capture the flag, flashlight tag, board games, paper airplane contest, Alka-Seltzer rockets, storytelling, pick up a Maryland Bay Game at a local library or do shadow puppets or charades. Have each family member choose a favorite game to play on the trip so everyone gets involved. Don't forget to pack games for the drive. Have really young children? Pack a new toy for them to investigate.

Campfire cooking

One of the highlights of any camping trip is the food! Turn meal time into fun time with special cook-off challenges, new recipes or theme nights. Here are

some must try campfire treats: banana boats, octopus hot dogs, mountain pies, campfire pizza, campfire doughnuts, corn on the cob, snakes on a stick, armpit fudge, grilled logs, and of course, s'mores.

Don't forget handmade ice cream to cool you down too!

The Parks are full of great opportunities for the whole family to celebrate being outdoors. Just remember why camping has remained so special and share that excitement and magic with loved ones. Traditions have to start somewhere – so either continue the old traditions or start new ones of your very own. ■

dnr.maryland.gov/publiclands

D. Matthew Ritter is Chief of Interpretation with DNR's Maryland Park Service.

Armpit Fudge Recipe

Looking for a fun and easy treat for your kids, but don't feel like baking? They'll love (and probably be grossed out by) the idea of armpit fudge. This simple, low-mess recipe only requires a small amount of energy.

You'll need:

- ½ cup powdered sugar
- 1 tablespoon butter
- 2 teaspoons cream cheese
- 1/4 tsp. of vanilla extract
- 2 teaspoons unsweetened cocoa
- 1 Ziploc plastic sandwich bag

Place ingredients in the plastic bag, and squeeze out all excess air. Make sure you seal the bag to prevent leakage! Place the bag under your armpit and squish until everything is well mixed. Feel free to find other creative ways to mix the ingredients: knee pits, between the ear and shoulder, even between your toes!

Get super creative by adding extras once everything is well mixed: peanut butter, mini marshmallows, small candy pieces, nuts, whatever you like.

Once it's all mixed, pull out a spoon and enjoy!

thegatheringplacehome.org



Karis King



Tom Darden

Family time at the shore

Discover fun

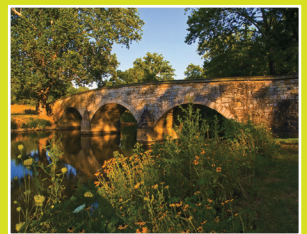
Exploration is our specialty. Check with a Park Ranger for insider information about the best way to have fun at the park

2011 Photo Contest

Attention photographers — amateurs, professionals and students alike: The 2011 *Maryland Natural Resource Magazine* Photo Contest is under way. So it's time to look over your pictures, pick the best ones, get your prints made and enter your photos. Find rules and registration forms at dnr.maryland.gov/photocontest



Grand Prize Winner (1st Place Wildlife) Debbie MacArthur



2010 Winners

1st Place Plants Lee Swantkowski • 1st Place Insects Lori R. Bramble • 1st Place Birds Larry Hitchens • 1st Place Outdoor Recreation Christine Edwards • 1st Place Scenic Chuck Durfor



World's Largest Fishing Tournament

Take the Challenge!

By Martin Gary

From rainbow trout in pristine Garrett County streams and giant striped bass in the Chesapeake Bay to bluefin tuna off Ocean City's coast, anglers are enjoying superb fishing on Maryland's waterways this year. And, as has quickly become an exciting tradition, Maryland anglers are also enjoying a chance to participate in the largest fishing tournament in the world!

With the best of summer fishing still ahead, anglers young and old are on track to break records, both on the number of citation awards and the amount of cash prizes awarded during the *Maryland Fishing Challenge*. Now larger than any other organized fishing tournament — including the Miami Metropolitan and Martha's Vineyard Bluefish Derby — the *Challenge* offers the greatest number of species and the largest area to fish for anyone with a rod and reel and love of fishing... and, participation is free!

A tribute to the past

The *Maryland Fishing Challenge* was created in 2005 to showcase Maryland as an outstanding fishing destination for citizens and visitors alike, with accessible, affordable, diverse and high quality fishing opportunities for children, families and individuals. Modeled after the great tournaments of the 1950s, the *Challenge* grand finale is a reincarnation of

the Chesapeake Bay Fishing Fair, which celebrated the end of the fishing season.

Two tournaments in one

Today's *Challenge* brings together two exciting components that keep anglers in the game all year long.

The Citation Award program begins the day after Labor Day and runs until the following September. Every angler who registers his or her award-qualifying fish at a participating citation center is automatically registered to participate in the grand prize drawing at the *Challenge* finale. A new online ticket system makes it easier than ever to speed enter the contest, and with 71 eligible species swimming around in Maryland waters (including, new this year, the Chesapeake Bay blue crab and blueline tilefish) it's less a question of "if," than "when" an angler will catch an award-qualifier!

Then, for three consecutive months during the summer, Maryland Department of Natural Resources (DNR) staff and guests release three batches of specially

tagged striped bass. Each release includes up to 200 imposters worth at least \$500 each and one genuine Diamond Jim, who's worth \$10,000 in June, \$20,000 in July and \$25,000 in August.

Sponsors & prizes

All this fun does not come without a great deal of hard work from many people and the dedication of sponsors and partner organizations. More than 20 sport fishing organizations and supporting corporate sponsors such as Bass Pro Shops, Tracker Boats, Bill's Outdoor Center on Deep Creek Lake, the World Fishing Network and Under Armour make it all possible.

Thanks to these stakeholders and sponsors, *Challenge* winners have raked in prizes valued at more than \$475,000 over the past six years. This year's prizes — valued at \$100,000 — include a boat and trailer package from Bass Pro Shops and Tracker Boats, thousands of dollars in fishing gear and trips from Bill's Outdoor Center, a tropical vacation from World Fishing Network and merchandise from



Deep sea fishing



Chesapeake Bay

Christina Holden

Martin Gary



Brandon Union

Diamond Jim finalists in 2010



Tom Darden

Western Maryland

Under Armour.

And, for the first time ever, the 2011 contest features a guaranteed \$25,000 payout: If one of the three authentic Diamond Jims is not caught by Labor Day, the cash prize is split equally among the anglers who snag imposters.

Hooking the youngsters

“Catch a fish” is one of the Maryland Children’s Outdoor Bill of Rights — issued by Governor Martin O’Malley in 2009 as part of the *Maryland Partnership for Children in Nature*, an initiative to ensure all Maryland young people have the opportunity to connect with their natural world and grow to become informed and responsible stewards.

And the *Challenge* has plenty of opportunities for kids. New this year is the *Maryland Youth Fishing Club*, created to make use of the contest and its 20-plus partner organizations, providing children and families with resources and contacts to help them find options for rewarding fishing trips and outdoor experiences in Maryland.

Kids participating in more than a dozen statewide youth fishing events are qualifying to win “dream” fishing trips and are also invited to participate in the grand finale.

Playing to win

This year’s awards ceremony will be held during the 43rd annual Seafood Festival on September 10 at Sandy Point State Park in Annapolis. But for those anglers who can’t wait until the finale to size up the competition, the official *Challenge* site also provides a real-time odometer of registered participants.

To be eligible for the contest, all fish must be caught recreationally by rod and reel. Complete rules are available online at dnr.maryland.gov/fisheries/challenge. ■

Martin Gary is a Fisheries Ecologist and Assistant Director for DNR’s Fisheries Service. He was born, raised and learned to fish in his home state of Maryland. He has worked for DNR for more than 25 years.



Tom Nappi

Sandy Point

Techno Treasure Hunt

The art of geocaching

By Tim Culbreth

Wandering through the forest in search of Maryland's biggest trees can be a thrill unto itself, but today, savvy techno-geeks are traversing public lands to find fortunes!

The United Nations General Assembly declared 2011 the International Year of Forests (IYOF), to celebrate sustainable management of the world's forests. To provide geocaching enthusiasts the opportunity to be part of this exciting global event, the Maryland Department of Natural Resources (DNR) and Maryland's Forestry Boards joined together to launch the IYOF Big Tree Geocaching Tour.

Caching on

Geocaching is a great way to merge modern technology with the rewarding adventures that await in our great outdoors. From Maryland to New Zealand and across the globe, geocaching is catching on!

In the technology-based treasure hunt, participants use a handheld Global Positioning System (GPS) unit or GPS enabled smart phone to locate containers called geocaches, that have been hidden by other players.

Getting Started

After signing up for a free membership on geocaching.com, participants can search 1.8 million active sites around the world for nearby caches of interest at Hide & Seek a Cache. There are currently nearly 4,000 Maryland sites listed, including adventures in State Parks, such as Patapsco Valley, or along the Captain John Smith Trail.

To complete the experience, geocachers enter the GPS coordinates and navigate to find containers large and small (size corresponds with the degree of difficulty

in finding them); return each geocache to the exact spot where it was found; write about their finds and sign the log book onsite; and finally, log their experiences at geocaching.com.

Finding the big ones

The IYOF Big Tree Geocaches are listed at geocaching.com. Searchers can find them by using the "Hidden by Username" search bar for listings under Chesapeake





ABOVE: A geocache container and a Global Positioning System (GPS) unit

FAR LEFT: The author with his handheld GPS unit

LEFT: This swamp white oak in Montgomery County is a geocache site.



Forester or foresttech08. More caches will be added throughout the year.

Many of these trees have outlived generations of trees surrounding them. Giant trees, dating back to before George Washington was president and reaching heights of over 100 feet, can be found across the State as part of the IYOF Big Tree Tour.

How did they get so big? Forest management plays a huge role in the development of robust trees. Healthy trees need good soil, plenty of sunlight and plenty of water. It's important to practice forest management to keep invasive species under control, which rob native species of resources.

Healthy forests clean our air, provide jobs, help improve community and personal health and provide wildlife with livable habitats. Forests also provide clean water by filtering nutrients out of water and stabilizing sediment.

The IYOF Big Tree Geocaching Tour is a fun activity that brings families together to enjoy the outdoors, learn the challenging game of geocaching, marvel at what these big trees have seen in their lifetimes and treasure their existence. ■

Tim Culbreth is a Chesapeake Watershed Forester with DNR's Maryland Forest Service.



INTERNATIONAL YEAR OF FORESTS • 2011

International Year of Forests

The United Nations General Assembly declared 2011 as International Year of Forests (IYOF) to celebrate the sustainable management of the world's forests.

Forests provide us with clean air, clean water, and wildlife habitat and help improve environmental, economical, community and personal health. The United States is participating by taking this opportunity to "Celebrate Forests and Celebrate Life."

Organizations throughout Maryland and the Chesapeake Bay watershed encourage people to get out and explore and enjoy the State's natural world. For more information about the U.S. Celebration of IYOF visit CelebrateForests.org. Also, check out: ForestryForTheBay.org for more ways to celebrate IYOF in your area.

SUMMER BOATING

Keeping it clean and courteous

By Bob Gaudette, Donna Morrow and Molly Winans

Maryland's sweltering summer heat has arrived, and to sea lovers, that means the perfect opportunity to cool off and enjoy some time on the water. Maryland is home to approximately 190,000 registered boats and more than 2,500 square miles of water for paddlers, sailors and pleasure boaters to explore. Today, there are more opportunities than ever for everyone to be environmentally friendly while enjoying our waterways.

Green up

One way to promote green boating is by selecting a *Clean Marina*, whether for long-term use or when traveling the State. Certified *Clean Marinas* work with Department of Natural Resources (DNR) staff to voluntarily exceed regulatory requirements by adopting a significant

proportion of recommendations in the *Maryland Clean Marina Guidebook*. If a marina is not already a Clean Marina, citizens can encourage the manager to green up.

"When businesses receive inquiries from customers about being a *Clean Marina*, the owners and managers take notice. We also certify yacht clubs and community associations, so boaters have many choices," says Donna Morrow, director of the *Clean Marinas Initiative*.

Take the pledge

The *Clean Boater Pledge* is another simple way for boaters to learn how to prevent pollution and commit to following clean boating practices. Pledge members receive clean boater decals for their boats as well as other DNR goodies. Boaters

can find the pledge at DNR licensing service centers or online.

The department recently launched *The Clean Diver Program* which offers professional divers advice on practices to prevent pollution while cleaning hulls. DNR encourages divers to take the pledge and share it with their customers and marina managers.

Boaters should never ask divers to have ablative paints (which are soluble and can wear away over time) cleaned in the water. Owners should also know what is on their hull. Unfortunately many boat owners do not know if they have "hard paint" which is durable, smooth and long lasting or ablative paints.

Pump it out

Protecting the State's waterways is the primary purpose of the *Maryland Pumpout Program*. The program provides grants to marinas for the purchase, installation and maintenance of marine sewage pumpout facilities.

For the small percentage of boaters who still dump sewage overboard, it's time to get legal. The practice of dumping is not only against the law, it is disrespectful to those who occupy surrounding slips.

Boaters with installed toilets can do their part by using marine pumpout facilities. By going online, boat owners can find one of Maryland's nearly 350 pumpout stations, tips for using a pumpout and obtain a boater's guide to sewage holding tanks.

DNR reminds boaters to choose enzyme-based deodorizers for holding tanks and portable toilets and to report



Family outing



Boating Services

Sanding a sailboat hull

broken pumpout stations to 410-260-8772 or pumpout@dnr.state.md.us.

Clean carefully

Boaters do not need to soap their entire boat every time it is used. Spot cleaning is recommended to eliminate scuffs and plain water and a scrub brush for the rest of the vessel.

When cleaning, boat owners should always use vacuum sanders, clean the area under the boat at the end of every day and use environmentally conscious cleaners, such as those with either the Green Seal or EPA Design for the Environment logo on the label.

Smokers should never toss cigarette butts overboard.

Under wraps

Boaters using shrink wrap to protect their boats can choose from a variety of ways to properly dispose of the coverings. Some marinas and boatyards rent roll-off dumpsters and pay to have shrink wrap hauled for recycling – a significant expense which is then passed on to customers.

A company that will recycle wrap for a fee of \$25 is Dr. Shrink, an international shrink wrap supplier found online. Another way to dispose of the wrap is to roll it up



U.S. Coast Guard

Enjoying a day of boating

tightly and put it in the curbside recycling bin or take it to the county landfill.

For those who can make the long-term investment, a canvas cover is more environmentally friendly.

Courtesy counts

Boaters share Maryland's expansive waterways with a variety of commercial and recreational vessels. Being courteous on the water is important to ensure an enjoyable and safe outing.

While having fun on the water, boaters should remember they are legally responsible for any property damage, injury or death resulting from a wake created by their boat.

Also, remember that noise travels great distances on the water, and can affect other boaters as well as waterfront property owners.

Protect children

A new Maryland law states that all children under the age of 13 must wear a U.S. Coast Guard approved life jacket while on a recreational vessel under 21 feet in length. The life jacket also must be the proper size for the child and in good, serviceable condition.

Brush up on safety

While taking to Maryland's waterways in a powerboat, kayak, sailboat or canoe, safety is the key to a great experience.

Maryland law requires anyone born on or after July 1, 1972 to have a certificate of boating safety education in their possession while operating a vessel in Maryland waters.

Certificates may be obtained by completing an approved boating safety class such as the *Maryland Basic Boating Course* or by passing an equivalency examination. DNR offers boating safety courses across the State throughout the year.

The American Canoe Association and the U.S. Coast Guard Auxiliary provide safety instruction to kayak and canoe enthusiasts. The *Auxiliary Paddlesports America Course* features information about the legal requirements of boating, such as, what to do in the case of an emergency, how to operate a boat safely, trip planning, what to know before getting underway and much more.

By heeding these reminders and tips, citizens can embark on a pleasurable boating experience all summer long on Maryland's magnificent miles and miles of waterways! ■

dnr.maryland.gov/boating

Bob Gaudette is Director of DNR's Boating Services.

Donna Morrow has directed DNR's Clean Marina Initiative since 2002.

Molly Winans is Editor of Annapolis-based *Spin Sheet* magazine.

STOP! YOU'RE SURROUNDED!

A treasure trove of biological diversity

By Paula Becker

Before you read any further, stand up. Take this magazine with you and go outside. Have a look and a listen. Odds are wherever you are in Maryland you are surrounded by hundreds of different kinds of animals.

Some are obvious and out in the sunlight; they sing, dance and display. Butterflies flit amongst the flowers; birds and cicadas sing in the trees. Some creatures are hidden, masters of camouflage, lurking in the shadows or emerging only at night.

Even now, the wheelbugs are watching you, as are vertebrates and invertebrates, mammals, birds, reptiles, amphibians, insects, mollusks, fish, butterflies, houseflies, dragonflies, bee flies, leafhoppers, slugs, ticks, turtles, shrews, isopods, mice, foxes, snakes... The list seems endless!

Maryland is a treasure trove of native plant and animal diversity. Its geography, bounded by mountains, rivers and sea, includes natural communities to suit any habitat need. Its place at the mid-Atlantic latitudes puts Maryland at the intersection of northern and southern species ranges.

Simply put, wildlife diversity is the many forms that animal life takes. When that diversity includes plants, fungus or other non-animal life forms, we call it biological diversity or biodiversity. Relationships between these animals and plants form a "web of life" that functions like a complex and fluid dance.

By the numbers

Maryland is home to 97 kinds of mammals, 410 species of birds (including breeding and non-breeding), 52 kinds of reptiles (snakes, turtles, lizards), 41 kinds of amphibians (frogs, toads, salamanders) and 635 species of fish (freshwater and saltwater).



The Delmarva fox squirrel is a federally endangered species.

The number of invertebrate species, those without a backbone, is estimated at over 20,000. Surveys have been conducted on the "prettier" species, like butterflies (148 species) and dragonflies and damselflies (185 species).

Current estimates of native bees place the number of species in Maryland between 350 and 400. Work continues on the more obscure groups.

Historical losses

With this embarrassment of riches in wildlife diversity, we take for granted that it was ever thus and ever shall be. Any Maryland third grader can tell you that John Smith and his crew were impressed

by the creatures they saw on their voyages up the Chesapeake. However, there are at least 135 fewer native plants and animals than there were at the time of Smith's expedition.

Since European settlement and written records began, Maryland's landscape has lost most of its large mammals, like the woodland bison, elk, gray wolf and cougar. You may know about the now-extinct passenger pigeon and its fabled flocks so huge they darkened the sky for hours.

But did you know Maryland used to have colorful green, gold and coral parakeets? The Carolina parakeet was a native bird that left Maryland skies in

John White

1865 and became extinct globally in the 1920s.

These are examples of species we know are gone. We have fewer records on less showy species, secretive creatures and plants. Research has leaned heavily on animals with backbones. Certainly, scientists are guilty of what Harvard researcher and early champion of biological diversity E. O. Wilson called “vertebrate chauvinism” when it comes to studying nature.

Nature as a provider

This great variety of wildlife is what makes it possible for humans to live here. Game birds and mammals along with an abundance of fishes have provided food, clothing and tools to human inhabitants for thousands of years.

Shellfish from the Chesapeake Bay gave sustenance and materials for trading up and down the East Coast. The first cash crop sent back to England by the early settlers was not tobacco but sturgeon. Atlantic and shortnose sturgeons were a source of meat. The skin could be tanned like leather, and the roe, or eggs, was a luxury for high society.

Even now, animal species alone are responsible for billions of dollars flowing into our economy... hunting and trapping supplies and clothing, outfitters and guides, binoculars for watching birds or butterflies, field guides, insect nets and cages, boats and fishing gear, the list goes on. Approximately 15 percent of all animals are considered game species; the rest are non-game.

Even people who want nothing to do with wildlife have had their lives touched by it. Blood from horseshoe crabs is used in medical research to identify harmful bacteria and to aid in treatments for metabolic disorders. There is more and more evidence supporting the benefits of wildlife and land conservation on the psychological and physical health of human societies.

Balancing act

Of course, it's not always all about us. Aside from wildlife's inherent value, it also serves an ecological purpose. Natural



Scarlet tanager

systems function in a delicate balance. If one part of the system is disturbed, the balance is thrown off. Natural processes may falter, becoming less efficient, leading to a cascade of problems.

For instance, many animal species eat insects. Bats, dragonflies, frogs and toads all prey on insects. Imagine how many mosquitoes there would be if the natural predators did not fill that role.

Pollination is a crucial ecosystem function performed by wildlife. Many of our native plants have co-evolved with our native pollinators. The tube-shaped flower of the trumpet creeper accommodates the long beak and brushy-tipped tongue of the ruby-throated hummingbird or the hollow “drinking straw” tongue of the large orange sulphur butterfly. The animal gets a meal and the plant gets pollination, and sometimes seeds are transported. One depends on the other for survival. Some of our agricultural crops also depend upon these pollinators.

Non-native animals simply cannot fill this role as effectively as natives and may instead, do damage to the ecosystem. Look to the nutria or the gypsy moth as examples of failed experiments with introduction.

Diversity challenges

Threats to Maryland's wildlife diversity exist. The State Rare, Threatened and



Peck skipper on Vervain

Endangered species list includes more than 600 species.

Most State-endangered species are plants (265); 79 are animals. Additionally, 79 plants and 20 animals are considered threatened. A fraction of these 600 species are also on the federal endangered species list. These include the Delmarva fox squirrel, bog turtle, dwarf wedge mussel and shortnose sturgeon – which never recovered from over-fishing in the early colonial period.

If we include other vulnerable species not granted legal protection status, the State list expands to more than 1,000 species of plants and animals.



Great spangled fritillary perched on milkweed

Cause and effect

Each rare species may have different reasons for its vulnerability. Of human-related causes, there are four major categories. The most significant is habitat loss and fragmentation, which can be caused by several factors. Poorly planned development is one.

Inadequate forestry practices, which don't recognize the need for functioning habitat, and improper agricultural practices, like over-grazing or inadequate forested boundaries along streams, also can contribute to habitat loss.

A second human-related cause is invasion by non-native plant and animal species. Whether introduced accidentally or intentionally, these invaders are the fastest growing reason for habitat degradation. Often there is no natural control of these exotic species and they can overwhelm the landscape.

Air and water pollution may come from several sources. Some sources can be tracked to the offender. The classic scenario is the "giant pipe from a factory spilling into a stream," called point source pollution.

Some are harder to pinpoint. These are called non-point source. Fertilizer runoff from lawns or car fluids washed from roads is non-point source pollution.

Finally, collection, once the greatest direct threat to many showier species, is now fourth on the list, thanks to greater enforcement.

Two overarching themes must be highlighted on this list: human population growth and all that entails (housing, food, clothing, space for an ever growing humanity), and climate change with sea level rise.

Working alongside nature

Certainly, the outlook is dark for the future of our wild populations. Doom and gloom may be the watchwords of the day. But, as these ills are man made, so too are their cures... such as changing development patterns so buildings share facilities like sewage treatment, planned greenspace and reducing overall sprawl.

Recognizing that smaller houses or cluster housing are easier to maintain and cheaper to heat and cool will

decrease impact on the landscape while helping to increase bank accounts.

Changing our housing landscapes from large lawns which require fertilizers or pesticides and watering and maintenance will not only free up personal time but also send fewer chemicals into our waterways.

Better yet, convert part of the lawn to perennial beds of native plants. You will shrink your mowing time while creating habitat for our native birds, butterflies and bees. A classic "win-win" solution for all!

Funding hope

At the federal and state level, work is being done to learn more about wildlife diversity. Federal funding from the State Wildlife Grants program is used to study the lesser known species and their habitats in Maryland. These funds are helping to conserve wildlife diversity comprehensively for the first time in the almost 100 year history of the Department of Natural Resources (DNR).

As part of this endeavor, DNR's Wildlife and Heritage Service has produced the *Maryland Wildlife Diversity Conservation Plan*. Written in 2005, this plan is designed to provide a framework and direction for wildlife conservation efforts for the next decade and beyond. The plan is available in full on the DNR website (dnr.maryland.gov).

Time for a change

It has taken a few hundred years to get to this point for our diverse wildlife populations. Problems won't be solved overnight. We will have to learn new ways to live and think while making a smaller impact on the land.

It will take a concerted effort by all, recognizing that our own survival is inextricably linked to the strength and health of our natural diversity.

But changing our behavior will be less painful knowing that we are improving our own lives along with the biological diversity of Maryland's bountiful natural world. ■

Paula G. Becker is Outreach Ecologist/Volunteer Coordinator with DNR's Wildlife & Heritage Service Natural Heritage Program.

COMING OUT OF THEIR SHELLS

Celebrating the Year of the Turtle

By Scott Smith

"The turtle lives 'twixt
plated decks
Which practically conceal
its sex.
I think it clever of the turtle
In such a fix to be so fertile."

Ogden Nash

If only these poetic words were true – in reality turtles are not so fertile. In fact worldwide their populations are in trouble. About 65 percent of the 322 species found on Earth are red-listed by the International Union for the Conservation of Nature and 41 percent are considered threatened with extinction. Turtle populations suffer from overharvesting, accidental death from commercial and recreational fishing industries, illegal collecting and high rates of predation, primarily from raccoons and habitat loss.

To bring the plight of turtles and their importance to wetland and terrestrial ecosystems into the public eye, Partners in Amphibian and Reptile Conservation (PARC) designated 2011 as the Year of the Turtle (YOT).

They are not helped by their own biology (delayed sexual maturity) and they are clearly not suited

for the frenetic pace of our modern world, especially a world increasingly overrun by roads and development. Climate change and resultant sea-level rise threatens to flood coastal turtle nesting habitats and increased temperatures are likely to cause skewed sex ratios... in many turtle species, gender is determined by incubation temperatures.

Department of Natural Resources (DNR) has been involved with PARC through its northeast working group (NEPARC) since its inception in 1999.

Maryland turtles in danger

The U.S. is one of the world centers of turtle biodiversity, with more turtle species than anywhere on Earth except for Southeast Asia. Here in Maryland, the bog turtle is listed internationally as one of the 25 most endangered turtles in the world and is one of only two U.S. species on the list. Additionally, of the 19 species of turtles found in Maryland, eight are federally and/or State listed.

YOT has special resonance here as it coincides with an ongoing five-year Maryland Amphibian and Reptile Atlas project (2010-2014), co-sponsored by DNR and the Natural History Society of Maryland. This is an effort to document all species statewide by 10-square-mile "atlas blocks" marylandnature.org/mara

Get involved

Those interested in helping turtles can sponsor a turtle-themed event, volunteer at one of Maryland's State Parks or for a local turtle or natural history organization such as the Natural History Society of Maryland or the *Mid-Atlantic Turtle & Tortoise Society* at matts.org. ■

Follow YOT at yearoftheturtle.org,
[facebook.com/pages/
yearoftheturtle2011](https://facebook.com/pages/yearoftheturtle2011) and
twitter.com/YearOfTheTurtle.

Scott Smith has worked for DNR for 22 years. He is a Wildlife Ecologist with DNR's Wildlife & Heritage Service at the Wye Mills Field Office.



CLOCKWISE FROM UPPER LEFT:
Diamondback terrapin, spiny
softshell, bog turtle, snapping
turtle, painted turtle, box
turtle, red-eared slider

Spotlighting the plight of turtles

YOT is a year-long focus on turtle conservation, education, and research with themed events held by anyone interested and motivated. PARC and its many partners are sponsoring a YOT calendar photo contest, a citizen scientist USA Turtle Mapping Project and are issuing a monthly YOT newsletter promoting involvement in turtle conservation and awareness.

The group is hoping others will pick up the cause and sponsor a turtle event, give an educational talk on turtles or volunteer with a local turtle conservation organization. The Maryland



MARYLAND IS... SMART, GREEN

Governor plants one millionth tree

Governor Martin O'Malley planted a tree with the Maryland Forest Brigade on May 4, helping the inmate work program surpass its goal of planting one million trees on public lands. The Governor planted the tree at Merkle Wildlife Sanctuary in Upper Marlboro.

Governor O'Malley's *Marylanders Plant Trees* initiative was launched in 2009 with two distinct goals: to have the State – using inmate labor – plant one million trees by 2011, and to inspire citizens to plant 50,000 trees by the end of 2010. Both goals have now been met.

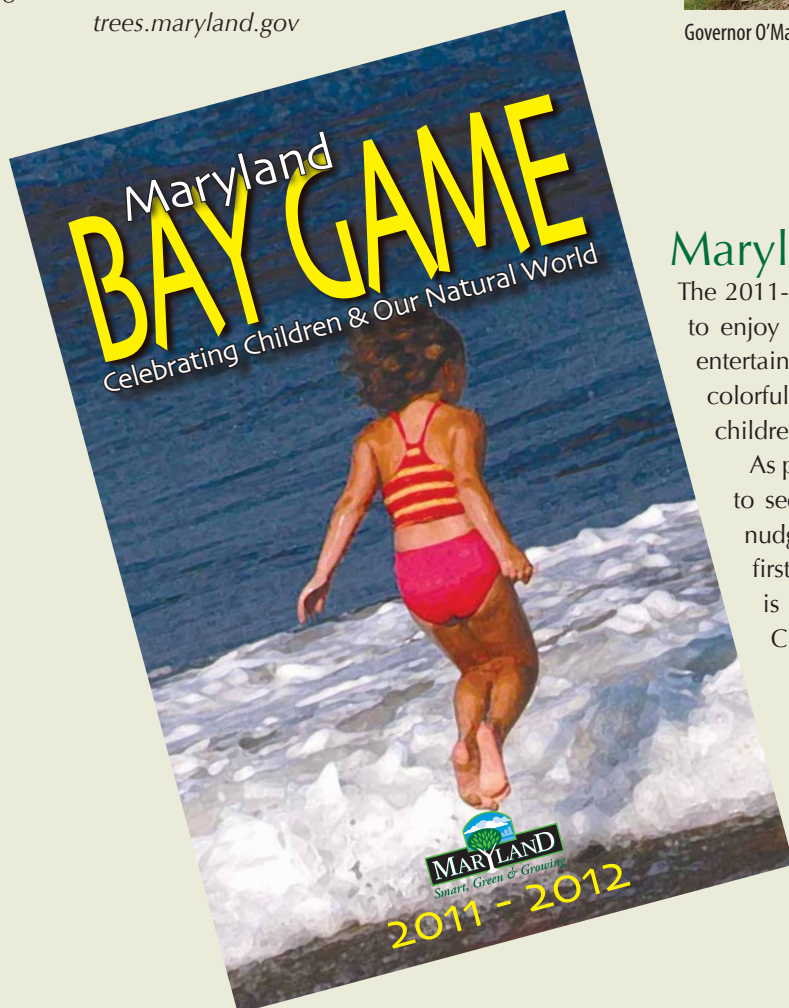
Through a partnership among the Maryland Departments of Natural Resources, Public Safety and Correctional Services and Transportation's State Highway Administration, the Forest Brigade planted 152,300 in 2009 and 399,410 in 2010, and surpassed a million with 505,100 this year.

Citizens can take advantage of the *Marylanders Plant Trees* \$25 coupon towards the purchase of a tree at more than 80 nurseries and garden centers across the State.

trees.maryland.gov



Governor O'Malley plants the goal reaching one millionth tree!



Maryland Bay Game now available

The 2011-2012 Maryland Bay Game is now available for children to enjoy across the State. The Bay Game engages kids through entertaining pages of puzzles, quizzes, useful information, maps, colorful games and connect-the-dots drawings, while teaching children what they can do to explore our natural world.

As part of the agency's mission to inspire Maryland's children to see the world of nature as a gift to be treasured, and to nudge youthful inspiration along the way, DNR published its first Bay Game in 1997. Now in its 14th year, the publication is designed to teach children about Maryland and the Chesapeake Bay ecosystem.

The free activity book is available at county libraries, various malls, tourist and welcome centers and at State Parks. Sponsors of this year's Bay Game include The Chesapeake Bay Trust, Visit Baltimore, The National Aquarium, Giant Foods, United HealthCare, Somerset County Tourism, Greenstreet Growers, Maryland Transit Authority, Maryland Departments of Housing and Community Development, the Environment and Agriculture and various units within DNR.

They're back: Maryland Blue Crabs

The results of the 2011 Blue Crab Winter Dredge Survey are in! The study found that the Chesapeake Bay's blue crab population is well above the target for the third year in a row. At 460 million crabs, the Chesapeake Bay's blue crab population is at its second highest level since 1997, and nearly double the record low of 249 million in 2007.

For watermen across the Bay, last year's abundance translated into a harvest of more than 89 million pounds — the highest since 1993. The survey also found that 254 million adult crabs survived an unusually cold winter, above the current population target for the third year in a row.



Maryland blue crab

Since 1990, the survey has sampled 1,500 sites throughout the Chesapeake Bay from December through March. By sampling during winter months when blue crabs are buried in the mud and stationary, scientists can develop, with good precision, estimates of the number of crabs in the Bay. Maryland's management system of daily catch limits and closed periods is designed to ensure that annual crab harvest stays balanced with annual shifts in abundance.

Solar panels help power DNR Headquarters

The Maryland Departments of General Services (DGS) and Natural Resources (DNR) partnered with SunEdison to install solar panels on the roof of the Tawes office complex in Annapolis. The new solar panels will reduce DNR's carbon footprint by approximately 160,500 pounds of carbon dioxide annually.



Solar panels help power the Tawes Building, headquarters of DNR.

Department of General Services

The solar units were installed at no cost to Maryland taxpayers under a 20-year power purchase agreement with SunEdison. SunEdison is North America's largest solar energy services provider and a subsidiary of MEMC Electronic Materials. Under an innovative agreement, SunEdison installed, owns and operates solar power systems at four State buildings. In return, DGS will purchase the energy generated from the four systems for 20 years. All the power produced will reduce the amount of energy drawn from the grid by about

519,720 kWh and Green House Gas emissions by approximately 600,000 pounds of carbon dioxide annually.

Rooftop solar systems have also been placed on three other DGS-operated buildings:

- John R. Hargrove, Sr. District Court and Multi-Service Center, 700 East Patapsco Avenue, Baltimore
- Elkton District Court and Multi-Service Center, 170 East Main Street, Elkton
- Ellicott District Court and Multi-Service Center, 3451 Courthouse Drive, Ellicott City

Within 20 years, the combined systems will produce over 11 million kWh of energy, enough to power over 1,000 homes for a year and offset over 14 million pounds of carbon dioxide.

Among ongoing collaborative energy conservation efforts, DNR and DGS have retrofitted buildings at Rocky Gap State Park with a geothermal heat pump; the Hammerman Complex building at Gunpowder State Park is a LEED Silver green building; the future Harriet Tubman Center is being designed and constructed to meet and possibly exceed LEED Silver standards; and the new Madonna Forestry building in Harford County has a green roof.

Vote for Maryland

Vote for Maryland State Parks in the Odwalla Plant a Tree Program! Maryland is once again competing against all 49 other states in a battle for \$100,000 toward planting trees in State Parks — and you can help! All it takes is one click of your mouse to vote, and Odwalla will donate \$1 to Maryland State Parks.

odwalla.com/plantatree/_MD.jsp

MULTITASKERS OF THE CHESAPEAKE

A report on Maryland's forest buffers

By Dr. Anne Hairston-Strang

Forests are true multitaskers. They help improve water and air quality, provide wildlife habitat, stabilize stream banks, and support fish and other aquatic life. Trees and vegetation planted as buffers along streams are a part of the Chesapeake Bay's natural life support system.

The best way to ensure that these life-giving functions continue is to protect existing forests, especially near the water. In places where trees have been lost, reforestation is the next best remedy.

The Department of Natural Resources (DNR) *Assessing Forest Buffer Functions after Five Years Report* summarizes monitoring results on newly planted buffers.

To help restore the Chesapeake Bay and the many benefits of trees, DNR began assisting landowners with replanting more than two decades ago. The State has planted more than 1,300 miles of riparian (river/stream bank) forest buffers since 1996.

Digging deeper

With an abundance of research from around the globe, scientists now know a lot about how mature forest buffers function in improving water quality.

The recently completed DNR report provides an interesting look at newly planted buffers in Maryland.

The study targeted 34 buffers between 2000 and 2008, in the Monocacy, Catocin and Antietam watersheds. The buffer locations — Frederick, Carroll and Washington Counties — are some of the State's priority areas for replanting forest buffers. Three additional buffers were measured on the Eastern Shore to expand the basis for growth measurements.

The buffers averaged over 100 feet in width and were located in mostly small, rural watersheds, ranging from 38 to 19,000 acres.

DNR's Forest Service, in cooperation with the U.S. Department of Agriculture Forest Service and the Potomac Watershed Partnership, conducted the assessments to determine long-term development trends in growth and environmental function. The buffers were measured the first year they were planted and re-measured five or more years later to see what functions developed first.

Pasture plantings

To get the best results the sites must be well-prepared by carefully matching tree species to site conditions, and maintaining good growing conditions around planted trees for at least 3 to 5 years.

Researchers found that trees planted into pastures took nearly five years to

across all species of trees, with more than 80 percent of young trees surviving the first year. Losses continued by about 12 percent per year for the next four years due to drought, grass competition and lack of maintenance.

After more than five years, these sites still averaged more than 200 trees per acre, the long term goal. The number of plant species increased by two-thirds, primarily due to newly planted trees and natural seedlings.

The Eastern Shore buffers included up to 80 percent native pines as part of a mix of trees. Pines had a higher growth rate and were able to completely shade the sites several years before most hardwoods.

Stable banks and bottoms

Along the buffers, stream bank stability improved significantly between 2003 and 2008. Bugs found on stream bottoms are one of the early indicators of improving conditions. These aquatic invertebrates form the base of the food chain. After five years of buffer growth, streams averaged two additional types of these creatures, expanding diversity.

Several other measures showed improving trends, although many sites varied too much to be significant.

Cool water

Most trees were too short to offer much shade after only five or six years, but the increased growth of vegetation next to the stream started a trend in the right direction. Greater changes are expected in the future after trees grow taller and are able to shade the streams.



Dave Robbins

DNR Forester Paul Eriksson collects data at a buffer monitoring site.

become well-established. After this time period, very few were lost to drought or damage from deer. Survival was measured

Maryland Green Schools

A celebration of young people

Children attending the 2011 *Maryland Green Schools Youth Summit* at Sandy Point State Park experienced more than learning what it means to be “green.” Some who came to the event had never seen the Chesapeake Bay, never been to a beach, flown a kite, touched an animal, or built a sand castle. Every child had these opportunities and much more as part of the day-long second annual summit.

Hosted by the Maryland Association for Environmental and Outdoor Education (MAEOE), the Maryland Department of Natural Resources (DNR) and State Department of Education, the day was spent engaging students and teachers in environmental experiences and activities.

Children in nature

Nearly 4,000 students, teachers, parents and environmental education professionals attended the June 3 event, honoring certified Maryland Green Schools.

This celebration is a component of the Environmental Literacy Plan developed through Governor Martin O’Malley’s *Partnership for Children in Nature* to provide youth with opportunities for outdoor recreation, learning and scientific study. The *Maryland Green Schools Program* and the annual *Youth Summit* are two of several endeavors serving to carry out the Governor’s vision for *Children in Nature*.

“Our Maryland Green Schools set a high bar for environmental learning in the classroom,” said Governor O’Malley. “By teaching students the importance of our natural world, we are cultivating a sense of responsibility in Maryland’s next generation.”

Go green

The summit was designed to encourage existing *Maryland Green Schools* to

push themselves even further and inspire Maryland schools not yet achieving Green Schools status, to embrace the green culture. Currently, 20 percent of Maryland’s schools are now Green Schools.



Jill Zarend-Kubacko

In addition to award ceremonies, an environmental literacy bazaar with more than 50 organizations featured hands-on activities. Youth leadership workshops were led by the Alliance for Climate Education. A *Maryland Green School Student Showcase* was featured and a town hall meeting provided students an opportunity to interact with elected officials.

Tools for students

The *Maryland Green School Program* gives students the tools to practically apply knowledge in ways that create a healthier environment. Student-led projects are responsible for significant contributions to the program.

Reservoir High School in Howard County reduced school energy consumption by 323,985 kilowatts, saving \$91,000. Evergreen Elementary in St. Mary’s County instituted a no waste lunch program and Pocomoke Middle School in Worcester County restored 1,000 linear feet of shoreline.

The *Maryland Green Schools Program* is open to any school in the State.

Governor O’Malley and MAEOE are optimistic that all Maryland schools will someday receive accreditation. ■

maeoe.org



Tim Culbreth

Seneca State Park

Researchers discovered that average air temperatures dropped 1 to 2 degrees, which is considered a modest change. This variation is in an important range for cold water fish, like trout. The temperature dropped from 21°Celsius to almost 19°Celsius, falling below the 20°Celsius threshold that supports natural trout reproduction. Continued growth of shading and cooler water temperatures could greatly enhance the chances for healthy trout populations in these streams.

Looking forward

Other research looking at hardwood seedlings in the Mid-Atlantic region has shown significant improvements after 15 years. DNR is continuing to monitor these long term sites to document progress, and keep buffers multi-tasking for years to come. ■

dnr.maryland.gov/forests/pdfs/trees.maryland.gov

Dr. Anne Hairston-Strang is a Forest Hydrologist, with DNR’s Forest Service and wrote the *Assessing Forest Buffer Functions after Five Years Report*.



CREMONA FARM

Jewel of the Patuxent River

By Jamie Haydel

If there is one thing Norton T. Dodge's life is not lacking, it's adventure. From learning to rope cattle on his ranch school in Arizona when he was young to acquiring dissident artwork from Russia during the Cold War, Dodge has seen it all in his 83 years.

While his interests have taken him to locations all over the country, it became clear after speaking with Dodge and his wife, that their true passion lies with the preservation of the natural landscape of their historic Cremona Farm near Mechanicsville. Located on the west bank of the Patuxent River, Cremona is the largest property in St. Mary's County under conservation easement with the Maryland Environmental Trust (MET).

The couple grew up in areas surrounded by vast stretches of open land. Norton lived in Oklahoma while Nancy resided in Illinois. These inviting landscapes inspired the Dodges to experience nature up close.

To Nancy, there was nothing better than sailing on Lake Michigan or walking through a corn field and listening to the rustling of the husks. Norton remembers going on canoe trips down the St. Lawrence, Colorado and Green Rivers with his father and not seeing another soul for days – just how he liked it.

This driving impulse to be in the natural world has carried over into their current residence surrounded by farm land, fields and a vast, untouched nature preserve.

In search of Cremona

After completion of graduate school at Harvard University, Norton landed in Maryland teaching economics at the University of Maryland and later St. Mary's College. He soon fell in love with the tidewater region and began looking for property. Dodge eventually found Cremona and bought the 750-acre historic farm in 1966.

Since then, the Dodges have expanded Cremona to a total of 1,275 acres. Today the farm contains 40 buildings and structures, several of which are entrenched in the deep history of the area and date back to 1819 or earlier.

Horse stables, miles of riding trails, historic rental houses, crops of corn, soybeans, and wheat, and a vineyard also dot the landscape. In addition, Cremona contains nearly every imaginable kind of ecosystem and wild animal of the area. The forests, marshes, fields, waterfront and creeks are home to everything from foxes and minks to terrapin, eagles, swans, geese and song birds.

The Farm is also the base for a long-term terrapin research project that has involved several universities.

History abounds

There are a number of historic buildings at Cremona. The spacious brick Main House, noted for its remarkable staircase, was built in 1819. Sam's Cabin, which dates from the early 19th century, was occupied by a man named Sam who was born a slave and lived in the cabin until the 1930s.

The property also contains several old barns, including the De La Brooke barn built in 1815 or earlier. Placed on the

National Register about two years ago, it is yet to be restored.

The farm harbors nine tobacco barns. "Saving tobacco barns is essential so that an important part of Maryland's history is not lost forever," says Dodge.

Also, the tradition of foxhunting, which originated in this country at De La Brooke, the adjoining property, has continued at Cremona to the present.

After having lived at Cremona for so long, the Dodges have seen their fair share of environmental degradation. White swans that used to winter at Cremona by the hundreds have dwindled. Water pollution in the river has steadily worsened over the years, while the property has also been plagued by invasive species, shoreline erosion, an oil spill and air pollution resulting primarily from a nearby power plant.

Saving the land

In addition to these setbacks, there is also the ever present threat of encroaching residential sprawl. The Dodges have placed their property under a perpetual easement with MET, so as to leave nothing to chance.

"Both of us care very much about maintaining large areas of woodland and open space for the enjoyment of future generations. We've seen so many farms and forests cut to pieces by development that we've become very protective of Cremona and appreciate the role that MET has played in preservation," says Nancy.

With two perpetual conservation easements protecting the land, the Dodges can now look confidently to the future of Cremona. After all, it is not just a farm, but an



About MET

A statewide land trust governed by a citizen board of trustees and affiliated with the Department of Natural Resources, the Maryland Environmental Trust was established in 1967 by the Maryland General Assembly.

MET is one of the oldest and most successful land trusts in the country. The trust promotes the protection of open land through its Land Conservation Program, Monitoring and Stewardship Program and Local Land Trust Assistance Program. MET also provides grants to environmental education projects through the Keep Maryland Beautiful Program.

dnr.maryland.gov/met

opportunity for archeological, historic and environmental exploration.

The couple hopes to pursue future projects like oyster restoration, organic farming, tracking air and water pollutants, hosting environmental field-trips, continuing research on the terrapin population, and conducting studies of the fauna and flora of the woods and marshes.

The Dodges will be conducting oral interviews with local people who know about the area's history, and will be organizing archaeological digs of past structures and shell refuse on the property.

Through environmental preservation, Cremona will enable the Dodges and others to continue experiencing a lifestyle of adventure. ■

Jamie Haydel is a St. Mary's College Intern with the Maryland Environmental Trust.



Cremona Creek in Winter



The main house

SHORT TAKES

Paul Kazyak receives 2011 James B. Coulter Award

Paul Kazyak, a program manager with DNR's Resource Assessment Service, has received the 2011 James B. Coulter Award. The award was presented to Paul by the Maryland Department of the Environment and the Maryland Petroleum Council, for his work and volunteering in the field of natural resources and sustainability.

Paul formed the Boy Scouts of America Venturing Crew 202 in 2000, which educates high school students on environmental science and helps them develop, plan and carry out environmental restoration projects. He volunteers his time with the Boy Scouts,



(L-to-R) Maryland Petroleum Council Executive Director Drew Cobbs, Paul Kazyak, MDE Secretary Robert M. Summers

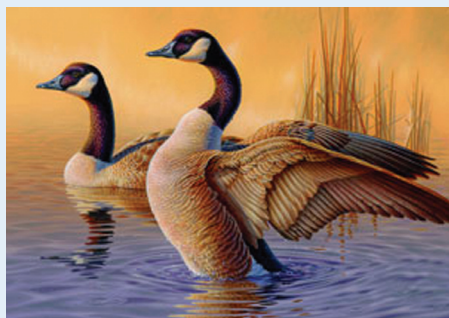
Highlands Environmental Leadership Program in Western Maryland, the Maryland Envirothon, environmental conferences and leadership training.

As a DNR biologist and instructor at Johns Hopkins University, Paul played a key role in the creation and implementation of the Maryland Biological Stream Survey, an aquatic monitoring program. He developed the national standard for the formal aquatic biologist training/testing requirements, and has led many presentations.

Towson resident wins third game bird stamp contest

Jim Taylor's painting, *Misty Autumn Sunrise*, is the winner of the 2011-2012 Maryland Migratory Game Bird Stamp Design Contest. This is the third win for the Towson resident, who has competed in the contest since the mid-1990s. Jim's artistic focus is Mid-Atlantic wildlife, and he has exhibited at the Havre de Grace Decoy Festival and Easton Waterfowl Festival.

Migratory game bird hunters are required to purchase these \$9 stamps and proceeds are used to fund migratory game bird research and habitat enhancement on the State's public lands.



Pennsylvania man wins bear stamp contest for fourth time

Steve Oliver from Delaware County, PA has won the 2011-2012 Maryland Black Bear Conservation Stamp Contest for his entry of a black bear strolling through a field of Black-eyed Susans. Oliver has the distinction of being the only artist to win this contest four times since its inception in 1996.



Steve's work has won numerous awards and honors and his paintings have been featured on several conservation/hunting stamps including the 2010 Delaware Duck Stamp.

Proceeds from the sale of the black bear stamps and other related items are used to compensate Maryland farmers experiencing agricultural damage.

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Park Service launches new volunteer system

Volunteering in Maryland State Parks is now easier than ever thanks to a new online statewide volunteer coordination system. Opportunities can be searched by keyword, zip code and distance, specific interest, activity, availability and specific park name. Users can also sign up for volunteer opportunities; enter available hours and view their referrals and placements. Visit dnr.maryland.gov/publiclands and click on the volunteers tab to register and create a profile.



Brandon Linton

(L-to-R) DNR Deputy Secretary Joe Gill, Cpl. Michael D. Friend, NRP Superintendent, Col. Georgr F. Johnson, IV

NRP honors officers, citizens

The Maryland Natural Resources Police (NRP) honored officers and private citizens from across the State with certificates of merit and appreciation for saving lives and their dedication to NRP. The annual ceremony was held at Calvary United Methodist Church in Annapolis on April 27.

NRP Officer of the Year was Corporal Michael D. Friend. For a complete list of award winners and their photographs please visit dnr.maryland.gov/dnrnews/pressrelease2011/042911.asp

DNR store offers great gifts

Want an easy way to shop, go green and get a unique and memorable gift? Check out the DNR online store!

Available 24/7, the website serves thousands of customers each year.

The online store sells more park passports than all State Parks combined. Other items available include water-proof and tear-proof trail guides of favorite parks, bandana maps, stuffed black bears, T-shirts, conservation stamps, trees for planting in recognition of a special occasion or person and this magazine. Users pay by credit card and orders are shipped within seven working days.

Since its inception in May 2004, the store has surpassed \$1 million in sales. Customers continually say the website is easy to use and the service they receive is exceptional.

shopdnr.com

Outdoor appetit: Crab Dip with Garlic Saltines

Kim Nutter submitted a delectable crab dip to the cookbook *What's Cooking at DNR* and we are sharing it here with readers of the Maryland Natural Resource magazine. Kim says during the monthly "girl's night" it is a hit with her friends. "I always have to make extra," she says

CRAB DIP WITH GARLIC SALTINES

For the crab dip:

1 cup cream cheese
½ cup mayonnaise
1 tablespoon Dijon mustard
½ tablespoon lemon juice
About 1 tablespoon, extra-virgin olive oil, optional
Kosher salt
Freshly ground black pepper
2 tablespoons chopped chives
1 ½ cup (about 12 ounces) fresh lump crabmeat, drained and picked over for shells

In a food processor add the cream cheese, mayonnaise and Dijon and blend until smooth. Add the lemon juice and olive oil, if desired, and season with salt and freshly ground black pepper. Process until well combined, scraping the sides with a rubber spatula as you go.

Dump the mixture into a large mixing bowl and fold in the chopped chives and crab meat. Adjust seasoning with salt and pepper, set aside and refrigerate.

For the crackers:

2 cloves garlic, minced
¼ bunch fresh flat-leafed parsley, chopped
½ stick butter, melted
30 saltine crackers (one packet)

Preheat oven to 350 degrees
Meanwhile, prepare the saltines. Make the garlic butter by combining minced garlic with parsley and melted butter. Lay out a flat layer



of saltines on a lined baking tray and use a pastry brush to baste the saltines with garlic butter. Bake in the oven for about 5 to 7 minutes until golden.

For the tomatoes:

1 pint cherry tomatoes
2 tablespoons balsamic vinegar
Extra virgin olive oil, optional
Kosher salt
Freshly ground black pepper

Split each tomato lengthwise and toss in a mixing bowl with balsamic vinegar. Toss the cherry tomatoes on a second baking tray and drizzle a little olive oil, if desired, over the top. Season with Salt and pepper
Bake in oven for 7 to 8 minutes.

To serve, arrange the 3 components so they can be assembled by each individual. Spoon the crab mixture into a bowl, stack the saltines in a pile next to it and serve the roasted tomatoes in a coffee cup. Take a saltine, spoon a little crab dip on top and garnish with a piece of tomato.

Kim Nutter is a DNR Services Specialist at the Hollifield Complex in Ellicott City

New laws

Protecting fisheries and encouraging aquaculture

The discovery of more than 32,000 pounds of illegally harvested striped bass in Maryland waters this winter sent shock waves up and down the East Coast. But the 2011 Legislative Session brought good news for law enforcement and citizens, and bad news for those who would violate the public trust.

On May 19 Governor Martin O'Malley, Senate President Mike Miller and House Speaker Mike Busch, signed into law legislation to protect Maryland's fisheries and encourage shellfish aquaculture.

The new laws passed by the General Assembly are designed to deter harmful fishing activity by increasing penalties for oyster, blue crab and striped bass poachers; authorizing Natural Resources Police (NRP) officers to inspect commercial fishing business's storage areas; and streamlining the penalty processes.

"Poaching hurts both honest watermen and our fishery resources, and I hope these new laws will help put an end to poaching," said Governor O'Malley. Through this legislation, we are sending a strong message in the fight to protect some of our most valued natural resources,"

Serious consequences

The Senate and House each approved bills to deter future illegal fishing activity. One new law requires revocation of an individual's commercial fishing licenses within 60 days of oyster poaching violations.

Another law requires the revocation of an individual's commercial fishing license if they are found to have knowingly committed egregious or repeat violations against striped bass or blue crabs.

A third increases the penalty for engaging in commercial fishing with a suspended license, a revoked license or without a license, with a fine of up to \$25,000 and imprisonment for up to one year.

The General Assembly also established a new misdemeanor charge for the

unlawful capture of over \$20,000 worth of striped bass, a charge that carries a penalty of up to two years imprisonment.

"These bills will help Maryland's premier fisheries and the folks who depend on them for their livelihoods. They're a win for everyone—except poachers," said Senator Frosh, a member of the Chesapeake Bay Commission.



NRP officers on patrol

Supporting Natural Resource Police

Governor O'Malley also signed into law bills that streamline administrative hearings for natural resource violations and improve the efficiency and effectiveness of law enforcement officers who protect the State's resources.

NRP officers are now authorized to inspect licensed commercial vessels, vehicles and premises where Maryland fishery resources may be stored.

Modernizing fisheries law enforcement, NRP officers are also authorized to issue electronic citations, enabling them to spend more time enforcing the law instead of doing administrative work.

The law also allows DNR to suspend or revoke a license after providing the opportunity for a hearing, thus preserving the rights of defendants while streamlining administrative

enforcement and allowing the NRP to focus on new cases.

Restoring oysters

The Governor also signed bills that support Maryland's Oyster Restoration and Aquaculture Development Plan by encouraging shellfish aquaculture business growth.

"The passing of these bills will provide opportunities to Maryland watermen, allowing them to once again bring Maryland to the forefront of oyster production," said John Shockley, waterman and co-owner of Hooper's Island Oyster Aquaculture Company.

Effective July 1, the State is consolidating the permitting process, streamlining several important aquaculture functions within DNR. The agency will now coordinate

all aquaculture permitting, issue water column leases, and staff the Aquaculture Coordinating Council and Aquaculture Review Board.

Finally, legislation allowing for the expansion of growing areas along barren submerged land will increase opportunities for developing small businesses engaged in aquaculture.

This expansion will also help increase natural disease resistance in the wild oyster population, create localized water quality improvements, create more oyster shell habitat, and enhance the natural recruitment of baby oysters within sanctuaries.

Together these new laws will protect Maryland's fisheries, expand economic benefits to small businesses and watermen and encourage the restoration of the native oyster population.

They will also help ensure that violators will be prosecuted for unlawful acts against our invaluable living resources.

Tom Parham

Director, Tidewater Ecosystems Assessment unit

By Karis King

While interviewing Tom Parham, director of the Department of Natural Resources (DNR) Tidewater Ecosystems Assessment unit for this issue's DNR@Work, he quickly shifted the focus from himself to the group as an entity.

"Since I work with such a great group of people, I have the easiest job in the world," says Tom. "We are constantly collaborating, catching up, seeing what's new and what everyone is working on and discussing how to move forward. It's a blast."

Tom has worked with DNR since 1996, utilizing his bachelor's degree in biology from the University of Mary Washington in Fredericksburg, Va. and his master's degree in oceanography from Old Dominion University in Norfolk.

As director, Tom oversees the programs within Tidewater Ecosystems Assessment unit. The groups' main focus is managing, processing, analyzing and monitoring data gathered from the Chesapeake and Coastal Bays. This information is used to assess the quality of Maryland's tidal waters, track progress and help establish Bay management goals.

"Bay restoration is a priority of Governor O'Malley, and an immense amount of time, money and energy is being devoted toward Bay monitoring," says Tom. "This water quality monitoring data is critical for determining how the Bay's doing."

Once collected, the data is processed, reviewed and posted on Eyes on the Bay, the brainchild of Tidewater Ecosystems Assessment staff. (Mark Trice, the projects team leader, was named DNR's 2010 Employee of the Year in recognition of his efforts.)

"Eyes on the Bay is a Google map-based system that allows people to see how the Bay is doing by providing information like current conditions, status trends, satellite photos and occurrences of harmful algal blooms," says Tom. "You can look at the Bay on the website and see exactly what's going on, it's a tremendous resource."

Tom says certain aspects of the Bay are getting better.

"We're seeing reductions in harmful nutrient pollution, improvement in fish and crab habitat and underwater grasses. So you can see that things are getting better in certain areas," he says. "We still have a long way to go but in some areas we have seen much improvement."

Tom's favorite part of the job is "coming to work and seeing people excited about what they're doing, brainstorming and coming up with new ideas." While he says he is most proud of his staff, he is also extremely proud of the strides they have made in better reaching the general public. The unit has taken Marylanders' views on the environment and found ways to adapt and convey information so that it resonates with residents.

"We got rid of the technical jargon and focused our summary reports on relating to citizens' values. For example, most people don't relate to nitrogen, phosphorus and sediment reduction, but they do relate to providing more habitats for Maryland's world-class seafood," says Tom. "With our new communication approach, we are now reaching a much larger audience."

At the end of the day, under Tom's leadership, DNR's Tidewater Ecosystem Assessment staff want to make a difference.



Jill Zarembko

"We want to put our information together and be the trusted voice for health of Maryland's tidal waters, enabling our residents to better protect and restore these valuable resources," Tom says. "And that's exactly what we are doing." ■

eyesonthebay.net

Karis King is Communications Assistant with DNR's Office of Communications.



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Sweet is the Work
Nona Durham